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Aphid species (Hemiptera, Aphididae) new in fauna of Upper Silesia region

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ABSTRACT. **Aphid species (Hemiptera, Aphididae) new in fauna of Upper Silesia region.** Paper presents data on the occurrence of five aphids species for the first time recorded from the territory of the zoogeographical region of Upper Silesia. This gives a total number of 386 aphid taxa known from this region.

KEY WORDS: faunistics, zoogeography, aphid, Poland, alien species.

INTRODUCTION

Aphids, contrary to most of other insects, are the group reaching its highest species diversity in the zone of moderate climates. Poland is among the best studied European countries in terms of aphid fauna, with 764 recorded aphid taxa (Wojciechowski *et al.* 2015). However, particular regions of Poland are still unevenly studied (Osiadacz & Hałaj 2009). The region of Upper Silesia, despite being the area of intense aphidological studies (e.g. Depa & Wojciechowski 2009, Depa & Trela 2011, Trela & Herczek 2014) still is far from being satisfactorily investigated. Here we present the results of studies of members of Student's Scientific Association "Faunatycy" concerning aphid fauna of this region, resulting in discovery of five aphid species for the first time recorded in Upper Silesia.

MATERIAL AND METHODS

The studies were conducted in 2015 on the territory of Piekary Śląskie [UTM CA58] during short field trips. The material was collected mostly in the housing estate and the adjacent areas of seminatural character. The aphids were localized on plant by careful searching of particular exemplars of plants, and later collected and preserved in 70% ethanol. After mounting on microscopic slide with method described by Kanturski & Wieczorek (2012) the specimens were identified using keys by Blackman & Eastop (1994, 2006, 2017), Wojciechowski (2003), Wojciechowski *et al.* (2016), Heie (1980). Collected material is deposited in the entomological collection of the Department of Zoology, University of Silesia.

RESULTS

The following species have been recorded in Upper Silesia for the first time:

Eriosomatinae

Pachypappa tremulae (Linnaeus, 1761)

19.05.2015; Piekary Śląskie, Brynica valley, *Populus tremula*, in rolled leaves, leg. P. Ledwoń, alate viviaprous female, det. A. Masłowski. A heteroecious species, host alternating between P. *tremula* and *Picea abies* (Heie 1980). This very rare species was so far known only from 4 regions of Poland: Baltic Sea coast, Masurian Lake district, Western Sudety and Western Beskidy mountains.

Mindarinae

Mindarus abietinus Koch, 1857

27.05.2016; Piekary Śląskie, town centre, *Abies alba*, between the needles of young twigs, leg. J. Zygała, alate viviparous female, det. A. Wyglenda. A monoecious species, feeding on *Abies* spp., known from about dozen regions of Poland.

Phloeomyzinae

Phloeomyzus passerinii (Signoret, 1875)

14.06.2016; Piekary Śląskie, Brynica valley, *Populus nigra*, in bark crevices, covered by dense wax, leg. D. Żebracka, apterous viviparous female, det. M. Kanturski; Monoecious species, the only existing in the subfamily Phloeomyzinae (Blackman & Eastop 1994). This rare species was so far known only from six regions of Poland.

Calaphidinae

Appendiseta robiniae (Gillette, 1907)

19.05.2015; Piekary Śląskie, housing estate, *Robinia pseudacacia*, on young twigs and on undersides of leaves, leg. M. Kanturski, alate females, det. Ł. Depa. An alien species living on invasive *R. pseudacacia*, so far known only from Wielkopolsko-Kujawska lowland.

Aphidinae

Pterocomma jacksoni Theobald, 1921

14.06.2016; Piekary Śląskie, Brynica valley, *Salix caprea*, young twigs, visited by ants *L. niger*, leg. A. Śmiech, apterous viviparous female, det. Ł. Depa. Monoecious species living on a few species of the genus *Salix*, known from about a dozen regions throughout the Poland.

DISCUSSION

There is no updated distributional catalogue of aphids of Poland, and since the last distributional checklist almost a decade has passed. Therefore, it is difficult to establish the number of aphid species known from Upper Silesia. The newest checklist

(Wojciechowski *et al.* 2015) only provides the general number of aphid species present in Poland. However, taking into account recent major faunistical papers from Upper Silesia (Depa & Wojciechowski 2009, Depa & Trela 2011ab, Trela & Herczek 2014, Hałaj *et al.* 2016) and the results of this paper the total number of 386 aphid taxa (species and subspecies) seems established. This puts Upper Silesia among the best studied regions in respect of aphid fauna, after Wielkopolsko-Kujawska Lowland, Masurian Lake district, Krakowsko-Wieluńska Upland and Mazovian Lowland. There are, however, habitats in Upper Silesia e.g. peat bogs or moist meadows, which were not studied in terms of aphidological research. In our opinion further studies may reveal at least a few more dozens of aphid species in our region.

REFERENCES

Blackman R.L., Eastop V.F. 1994. Aphids on the World's Trees. CAB International, Wallingford UK: 987 pp.

Blackman R.L., Eastop V.F. 2006. Aphids on the World's Herbaceous Plants and Shrubs. The Natural History Museum/John Wiley & Sons, Chichester UK: 1439 pp.

Blackman R.L., Eastop V.F. 2017. Aphids on the World's Plants. An online information and information guide, http://www.aphidsonworldsplants.info (accessed 15.05.17).

Depa Ł., Wojciechowski W. 2009. Aphids (Hemiptera: Aphidinea) of Garb Tarnogórski and their trophobiotic relations with ants. *Annals of Upper Silesian Museum* (*Entomology*) 18: 1–106.

Depa Ł., Trela J. 2011a. Nowe dla fauny Górnego Śląska gatunki mszyc (Hemiptera, Aphidoidea). *Acta entomologica silesiana* 19: 5–6.

Depa Ł., Trela J. 2011b. Aphids (Sternorrhyncha, Aphidinea) of Calvary Park in Piekary Śląskie (Upper Silesia). *Aphids and Other Hemipterous Insects* 17: 65–71.

Heie O.E. 1980. The Aphidoidea (Hemiptera) of Fennoscandia and Denmark. The families Mindaridae, Hormpahididae, Thelaxidae, Anoeciidae and Pemphigidae. *Fauna Entomologica Scandinavica* 9: 1–236.

Hałaj R., Osiadacz B., Poljaković-Pajnik L. 2016. Górny Śląsk – polski przyczółek zdobyty przez obcą mszycę *Prociphilus* (*Meliarhizophagus*) *fraxinifolii* (Riley, 1879). *Acta entomologica silesiana* 24(019): 85–93.

Kanturski M., Wieczorek K. 2012. Metody zbioru i preparowania mszyc (Hemiptera, Aphidoidea) w badaniach faunistycznych, taksonomicznych i molekularnych. *Młodzi Naukowcy dla polskiej Nauki* 8(5): 137–143.

Osiadacz B., Hałaj R. 2009. The aphids (Hemiptera: Sternorrhyncha: Aphidinea) of Poland. A distributional checklist. *Polish Entomological Monographs* 6: 1–96.

Trela J., Herczek A. 2014. The zoocenotic structure of aphids (Hemiptera, Sternorrhyncha, Aphidomorpha) in the selected plant comunnities of the Landscape Park "Cistercian Landscape Compositions of the Great Rudas"- monograph. Zespół Parków Krajobrazowych Województwa Śląskiego w Katowicach z/s w Będzinie, Katowice: 180 pp.

Wojciechowski W. 2003. A monograph of the Palaearctic Pterocommatinae (Aphididae, Aphidinea, Hemiptera). *Prace Naukowe Uniwersytetu Śląskiego w Katowicach* 2153: 112 pp.

Wojciechowski W., Depa Ł., Kanturski M., Węgierek M., Wieczorek K. 2015. An annotated checklist of the aphids (Hemiptera: Aphidomorpha) of Poland. *Polish Journal of Entomology* 84(4): 383–420.

Wojciechowski W., Depa Ł.,Halgoš J., Matečný I., Lukáš J., Kanturski M. 2016. Aphids of Slovakia. Distributional catalogue, checklist, keys and list of host plants. Comenius University in Bratislava Faculty of Natural Sciences, Bratysława: 344 pp.

STRESZCZENIE

Nowe gatunki mszyc (Hemiptera, Aphididae) w faunie Górnego Śląska

Praca przedstawia dane o występowaniu pięciu gatunków mszyc po raz pierwszy odnotowanych na Górnym Śląsku: *Pachypappa tremulae*, *Mindarus abietinus*, *Phloeomyzus passerinii*, *Appendiseta robiniae*, *Pterocomma jacksoni*; co daje łączną sumę 386 gatunków mszyc znanych z tego regionu.

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